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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,559	03/26/2001	C. Theodore Peachee	3174-000003	7773
27572	7590	05/02/2002		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303		EXAMINER GONZALEZ, JULIO C		
		ART UNIT 2834		PAPER NUMBER

DATE MAILED: 05/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/817,559	PEACHEE ET AL.	
	Examiner	Art Unit	
	Julio C. Gonzalez	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 15 February 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-27 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 March 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on 15 February 2002 is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8 and 9.
- 4) Interview Summary (PTO-413) Paper No(s). _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Drawings

- ✓ 1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the insulation layer between the winding wire and the stator segment core disclosed in claim 7 must be shown. From figure 10A, it is difficult to identify that the insulation layer is between the winding wire and the stator core. Also, the central portions that are deformed disclosed in claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 4, 5 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, how is the current flowing identified with the slope of a waveform been zero? Is the current flowing in the windings only when the slope of the waveform is zero? How is the zero slope related to the rotor position?

In claim 5, what is meant by a "look up table"? Is it a data storage like a memory, RAM device? How the sensorless drive circuit employs a "look up table"? Does the look up table have some pre-set positions/programs that determine the rotor position?

In claim 10, the core includes lateral slits and also first and second central portions that are deformed. How are these central portions deformed? In what way are the central portions deformed?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 09/803876. Although the conflicting claims are not identical, they are not patentably distinct from each other because: Both inventions are related to a switch reluctance machine comprising a stator, rotor, a drive circuit, stack of stator

plates, insulation layer between the winding wire and the stator segments, end caps and end caps retainers and both inventions use sensor less techniques for determining the position of the rotor.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 6-8, 11, 12, 16-18, 21-23 and 26 are rejected under 35

U.S.C. 103(a) as being unpatentable over Tang in view of Takeuchi et al

Tang discloses a switched reluctance machine having with a stator core, winding and rotor poles (see figure 1). Also, the reluctance machine has a sensorless system for controlling the machine (see abstract) and that the winding wire may be energized based on the rotor position (column 1, lines 15-24 & column 5, lines 28-32). Moreover, the monitoring may be based on the slope of a waveform (column 15, lines 1-5). However, Tang does not disclose that the stator can be made of a plurality of stator segments.

On the other hand, Takeuchi et al discloses for the purpose of purpose of increasing the efficiency of a motor, a machine having a plurality of circumferentially-spaced stator segments 11 with winding 16 and insulation 15 between the stator core plates and the winding 16 (see figure 2). Moreover, the stator segments 11 have a tooth section that extends radially and projections extending radially (see figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a reluctance machine as disclosed by Tang and to modify the invention by forming the stator from a plurality of stator segments for the purpose of purpose of increasing the efficiency of a motor as disclosed by Takeuchi et al.

7. Claims 3, 13 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang and Takeuchi et al as applied to claims 1, 11 and 21 above, and further in view of Moriarty.

The combined electrical machine discloses all of the elements above. However, the combined electrical machine does not disclose that a pulse generator in combination with the rotor position.

On the other hand, Moriarty discloses for the purpose of reducing the cost of manufacturing of a device that detects the rotor position that a pulse indicative of a rotor position can be supplied to a control circuit, thus the correct energization can be achieved (see paragraph 0007).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electrical machine as disclosed above and

to modify the invention by using a generated pulse discloses for the purpose of reducing the cost of manufacturing of a device that detects the rotor position as disclosed by Moriarty.

8. Claims 4, 5, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang and Takeuchi et al as applied to claims 1 and 11 above, and further in view of Mann et al.

The combined electrical machine discloses all of the elements above. However, the combined electrical machine does not disclose, explicitly that data from a table and the rotor position can be monitored by the slope of waveform.

On the other hand, Mann et al discloses for the purpose of reducing damage done to motors and reducing the cost of manufacture of motor that the motor uses a sensorless system wherein the windings are energized based on a data (see claim 4) and using the slope of a signal, the position of the rotor can be determined (see claim 6 (i), (j)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electrical machine as disclosed above and to modify the invention by using the slope of a waveform for determining the rotor position for the purpose of reducing damage done to motors and reducing the cost of manufacture of motor as disclosed by Mann et al.

9. Claims 9, 10, 19, 20, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang and Takeuchi et al as applied to claims 1 and 11 above, and further in view of Akita et al.

The combined electrical machine discloses all of the elements above. However, the combined electrical machine does not disclose first and second end caps and central portions.

On the other hand, Akita et al discloses for the purpose of improving the magnetic performance and increasing the mechanical precision for an iron core assembly that a first and second end cap are connected at axial ends of stator segments (see figure 36) and that the stator segments have central portions so as to hold the stator plates together (see figures 49(b), 50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electrical machine as disclosed above and to modify the invention by using end caps for the purpose of improving the magnetic performance and increasing the mechanical precision for an iron core assembly as disclosed by Akita et al.

Response to Arguments

10. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

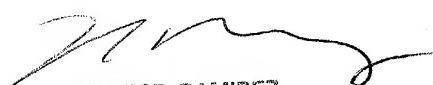
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jcg

April 29, 2002



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